EW-PTS User's Guide

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EW-PTS User's Guide

Introduction

EW-PTS is a development tool for emulating and programming the Holtek Programmable Timer device - HT13R90. This tool is designed for the purpose of easy to carry, easy to install and easy to use.

EW-PTS is capable of programming and emulation. Both programming and emulation work for on-line (connected to PC) mode as well as for off-line mode. Holtek support proper adaptor cards for the need of emulating the HT13R90 device.

EW-PTS can be connected to PC (on-line mode) by USB cable. It can also work stand alone (off-line mode).

System Requirement

- EW-PTS and proper adaptor (if necessary for emulation)
- Power adaptor for 9V/1.3A
- PC with windows 98/2000/XP system
- EverPro P1000 software utility

Notice The USB cable (connected to PC) supplies the power for programming while there is no power adaptor available. If the power adaptor is well connected, the USB cable is for data transmission use only. Whatever the power supplied to the EW-PTS, the maximum current is 500mA. EW-PTS supply 5V power via the adaptor card. Users can use it as the power source of its external emulation circuit. But be sure to make the power consumption under 400mA.

Installation

Connect the EW-PTS to PC by USB cable as shown in Figure 1.
Run the software installation utility (EverProP1000V100Install.exe)
Follow the installation steps and after the software is installed successfully, you can play the EW-PTS with the EverPro P1000.

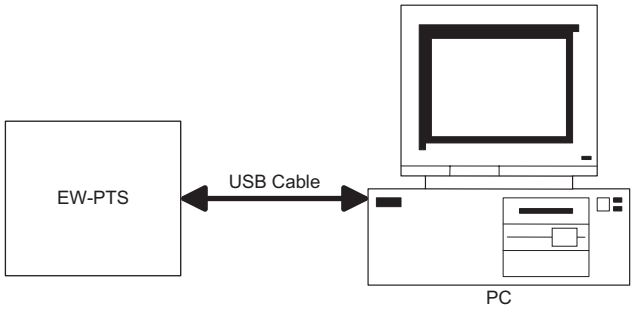

Figure 1

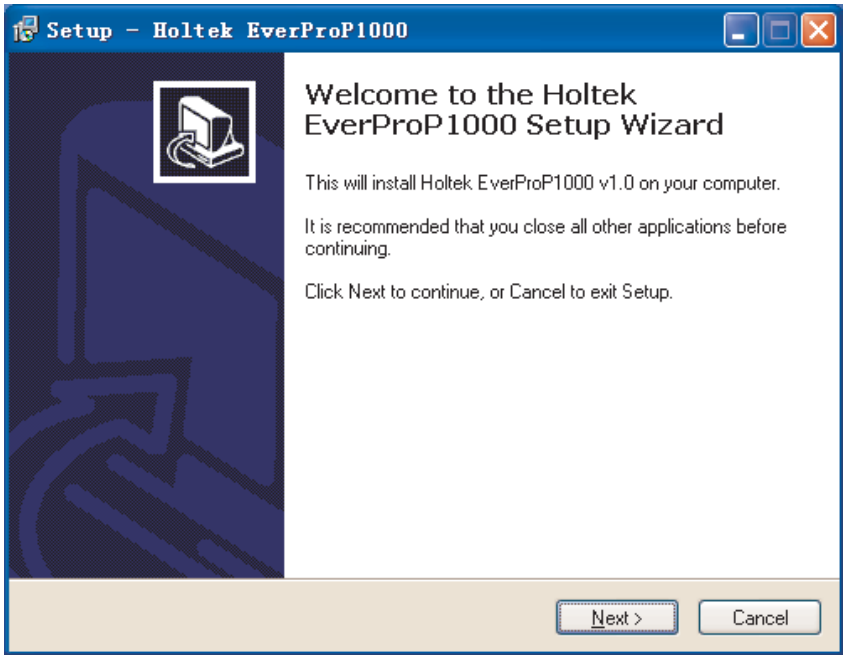
Setup - Holtek EverProP1000
Welcome to the Holtek EverProP1000 Setup Wizard
This will install Holtek EverProP1000 v1.0 on your computer.
It is recommended that you close all other applications before continuing.
Click Next to continue, or Cancel to exit Setup.
Next >
Cancel

Figure 2

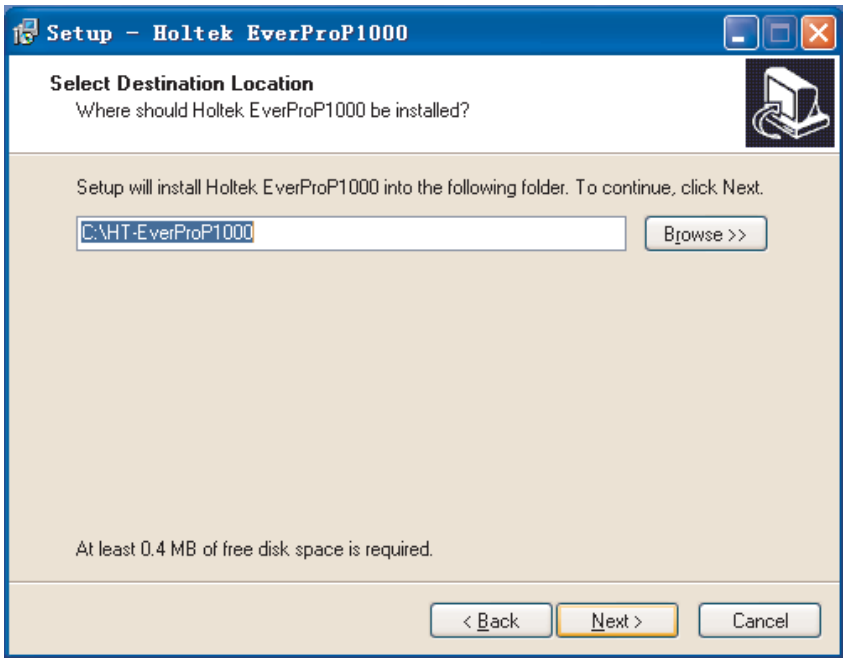
Setup - Holtek EverProP1000
Select Destination Location
Where should Holtek EverProP1000 be installed?
Setup will install Holtek EverProP1000 into the following folder. To continue, click Next.
C:\HT-EverProP1000
Browse >>
At least 0.4 MB of free disk space is required.
< Back
Next >
Cancel

Figure 3

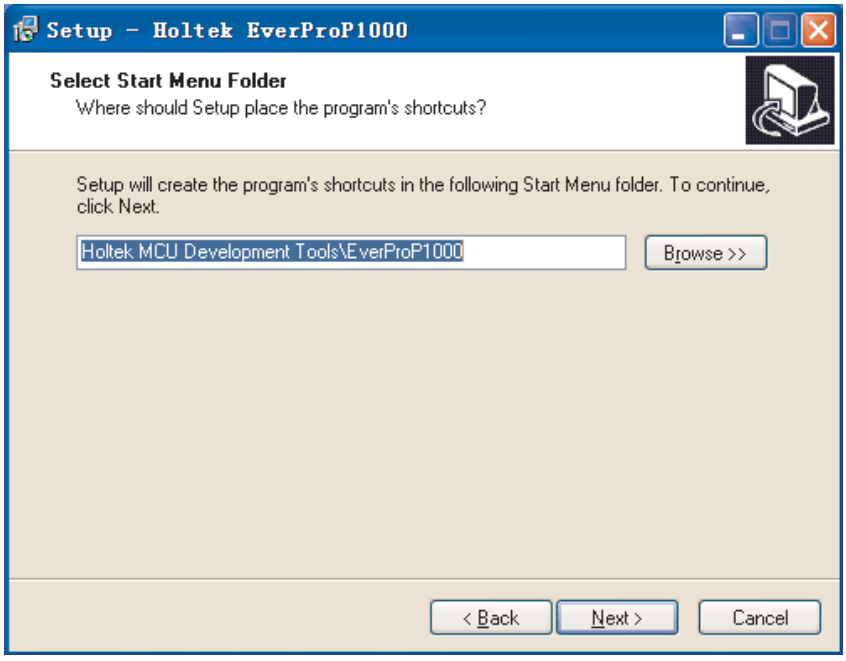
Setup - Holtek EverProP1000
Select Start Menu Folder
Where should Setup place the program's shortcuts?
Setup will create the program's shortcuts in the following Start Menu folder. To continue, click Next.
Holtek MCU Development Tools\EverProP1000
Browse >>
< Back
Next >
Cancel

Figure 4

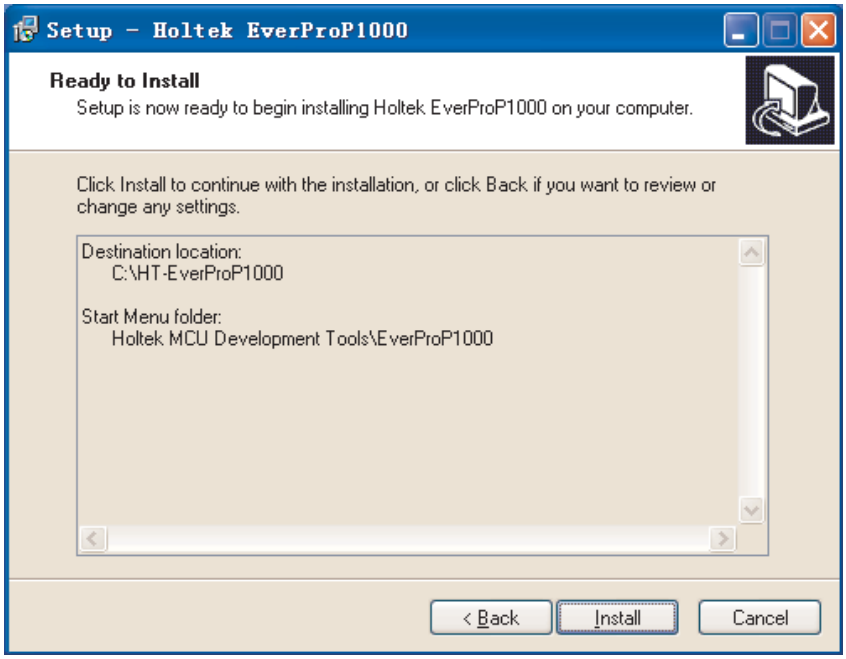
Setup - Holtek EverProP1000
Ready to Install
Setup is now ready to begin installing Holtek EverProP1000 on your computer.
Click Install to continue with the installation, or click Back if you want to review or change any settings.
Destination location:
C:\HT-EverProP1000
Start Menu folder:
Holtek MCU Development Tools\EverProP1000
< Back
Install
Cancel

Figure 5

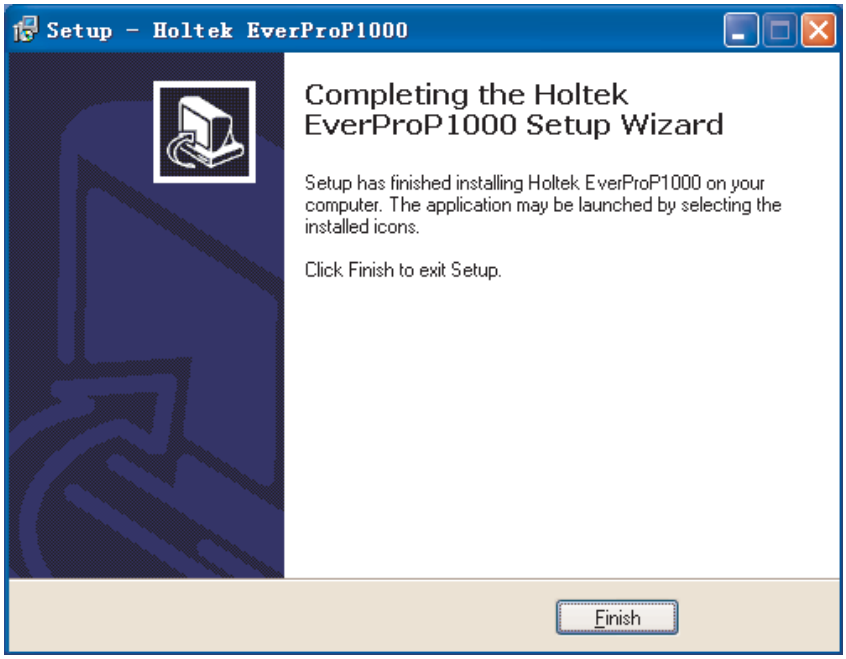
Setup - Holtek EverProP1000
Completing the Holtek EverProP1000 Setup Wizard
Setup has finished installing Holtek EverProP1000 on your computer. The application may be launched by selecting the installed icons.
Click Finish to exit Setup.
Finish

Figure 6

Hardware Configuration

The appearance of the EW-PTS is as shown in Figure 7~8.

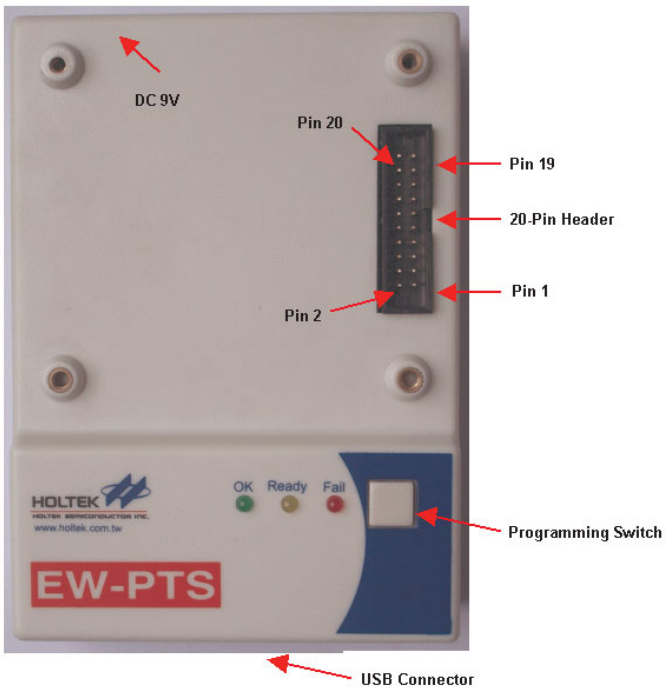

Figure 7

Figure 8

Component	Description
DC 9V	Power DC 9V interface
20-Pin Header	20 pin connector
OK	Green LED, normal indicator
Ready	Yellow LED, standby indicator
Fail	Red LED, normal indicator
Programming Switch	Command switch for off-line mode
USB Connector	USB connector (for connecting to PC)
4P DIP Switch	EW-PTS operation switch

Component Table for EW-PTS

HT13R90 Pin Name	Function	The Corresponding Position at 20-pin Header
LED1	AD0	8
LED2	CLK	10
OSC1	$\overline{CS}$	12
LED0	$\overline{RW}$	14
VDD	VDD	18
RESET	VPP	20
VSS	Ground (direct connection)	11, 13, 15, 16, 17, 19

Mapping Table of Pin Assignment for Programming

HT13R90 Pin Name under Emulation	The Corresponding Position at 20-pin Header
LED0	6
LED1	2
LED2	4
VCC	1
RESET	9

Mapping Table of Pin for Emulation

Programming HT13R90

Run the EverPro P1000 software utility. The main screen will be shown as Figure 9.

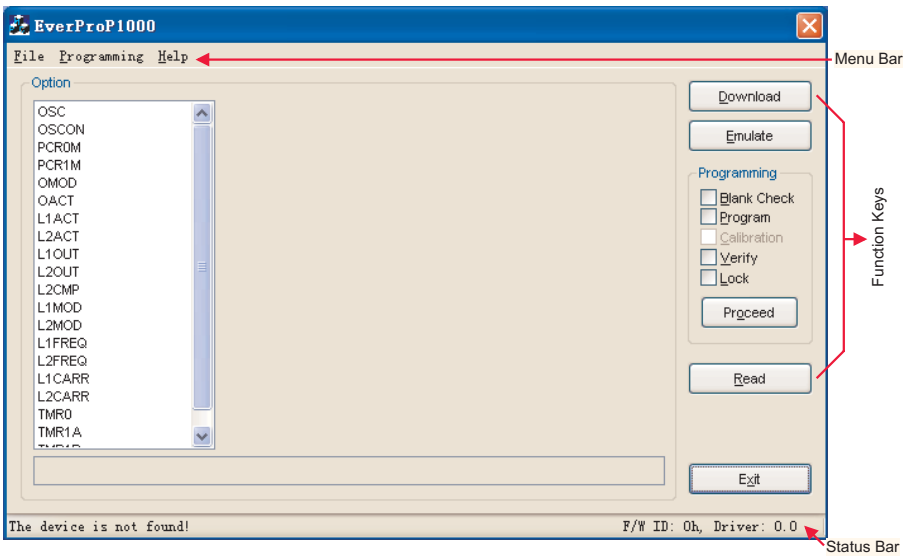

Figure 9

Select the options in the left hand side and save the setting as an .OPN file. All the descriptions of the options can be found in the Data Sheet for HT13R90.

On-Line Programming Mode

There are some buttons in the right hand side of EverPro P1000 main screen. The command descriptions for all the buttons are as follows.

Download

This command will download the options and driver data onto the Flash memory on the EW-PTS. You can create a new .OPN file or open an existing .OPN file before you click this download command.

Emulate

This command will start the emulation. Be sure to download the options to the EW-PTS before you click this emulate command. The system will ask you to download again if the option setting is modified before the emulation start.

Proceed
This command will do all the functions checked in the programming region. The command will stop if there is an error found in any of the programming functions.

The descriptions for the programming functions are as follows.

- Blank Check
  This function is used for checking the chip on the EW-PTS and find out whether it is empty or not. The result will be shown in the message window.
- Program
  The function is used for programming the option data onto the chip. The option data should be downloaded to the flash memory of the EW-PTS before this program function.
- Calibration
  If this function is checked, the EW-PTS will automatically calibrate the value for the internal RC option.
- Verify
  This function is used for comparing the option data on the flash memory and that on the chip. The result will be shown in the message window.
- Lock
  This function is used to protect the chip so that its option data cannot be read.

Read
This command is used to read the option data of the chip. The result will be uploaded to PC and be shown on the Option area of the EverPro P1000. You can save the result as another .OPN file.

Menu Functions

File Menu

- New
  Create a new .OPN file.
- Open
  Open an existing .OPN file.
- Save
  Save the option setting to an .OPN file.
- Save As
  Save the option setting to an .OPN file with a specified file name.
- Exit
  Exit EW-PTS system.

Programming Menu
All the functions in this menu are the same as that of the Proceed command.

Help Menu

- About
  Show the system information for the EverPro M1000.

Off-Line Programming Mode

The EW-PTS provides off-line programming mode. Be sure the following steps are accomplished before using off-line programming mode.

- Download the option data (in the on-line mode) to the flash on the EW-PTS. The yellow LED light indicates the successful download and the read LED light indicates an error.
- Adjust the DIP switch (on the back of EW-PTS) to select the correct setting. These DIP switches are only used for off-line mode.
- The following table shows the function and description of the DIP switches.

DIP Switch Position	Function	Description
SW1	Check ID	SW1 is ON, EW-PTS will check whether the chip is valid (with correct ID).
SW2	Blank Check	SW2 is ON, blank check before programming. SW2 is OFF, programming without blank checking. Programming steps: [Blank Check] → Program → Verify
SW3	Lock	SW3 is ON, lock the chip after programming.
SW4	Writer/Emulator	SW4 is ON, emulation mode. SW4 is OFF, programming mode.

Programming Procedure

- Step 1
  Make sure that the SW4 is at ″off″ state. Connect the 9V power adaptor to the EW-PTS.
  The EW-PTS will automatically check the data in the flash memory to see whether it's valid or not.
  If the data is valid, the EW-PTS will enter stand-by state. Otherwise, you should connect the EW-PTS to the PC and download the driver data and option data for off-line mode use.
- Step 2
  Put the chip onto the socket of EW-PTS.
- Step 3
  Click the programming switch on the EW-PTS. The programming steps are defined by the 4P DIP switch.
- Step 4
  Check the LED indicator to see the result. If the programming is fail, click the programming switch again to return to stand-by state.

Emulation Mode

Make sure that the option data and driver data were downloaded (in the on-line mode) to the EW-PTS successfully before you use the emulation function.

On-Line Emulation

Click the ″Emulation″ button on the right-hand side of the EverPro P1000 to start the emulation. The button label will be changed to ″Stop Emulation″. Click the ″Stop Emulation″ button to stop the emulation.

Off-Line Emulation

Adjust the SW4 DIP switch (on the back of EW-PTS) to ″on″ state. The yellow LED will flash quickly while the system is preparing for emulation. The yellow LED will be turn on to indicate the EW-PTS is ready for emulation.

Click the ″Programming Switch″ on the EW-PTS to start emulation.

Click again the ″Programming Switch″ to stop the emulation.

Descriptions for the LED Indicators

There are 3 LEDs on the EW-PTS to indicate the result for the programming and emulation functions. The following table list the meaning of each LEDs.

LED Status	Status	Description
Red LED – Failure Status	Flashing once	Chip is locked
	Flashing twice	Check ID error
	Flashing 3 times	Chip is not empty
	Flashing 4 times	Programming has failed
	Flashing 5 times	Verification has failed
	Flashing 6 times	Unable to lock the loaded device
	Flashing 7 times	Downloading option has failed
	Repeated Flash	Checking Flash has failed
Green LED – OK Status	Illuminated	Operation is successful or emulating
Yellow LED – Ready Status	Slow Flashing	Standby state: All function ready
	Rapid Flashing	Under programming
	Illuminated	Under emulation

Adaptors for EW-PTS

Holtek provides 3 types of adaptor card for different requirements.

The 8 pin DIP adaptor card (Type ID is CADP13R90DI8) is shown as Figure 10.
The 8 pin SOP adaptor card (Type ID is CADP13R90SO8) is shown as Figure 11.
The adaptor card for emulation (Type ID is CADP13R90EMU) is shown as Figure 12.
The circuit diagram for the CADP13R90EMU is shown as Figure 13.

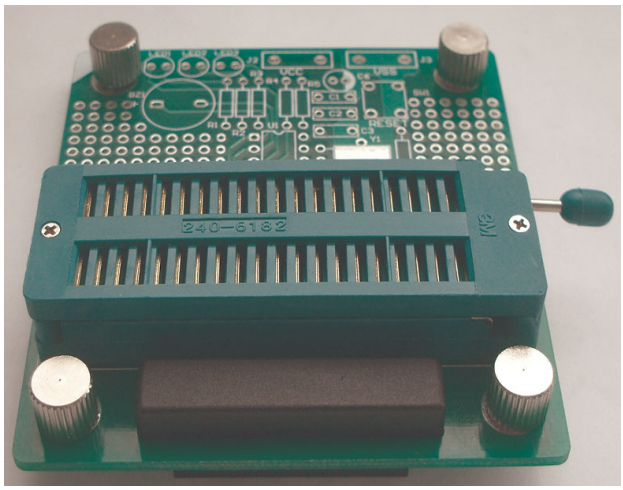

Figure 10. CADP13R90DI8

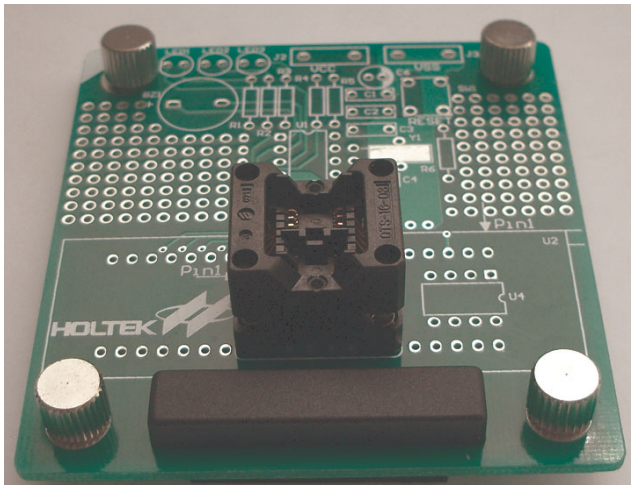

Figure 11. CADP13R90SO8

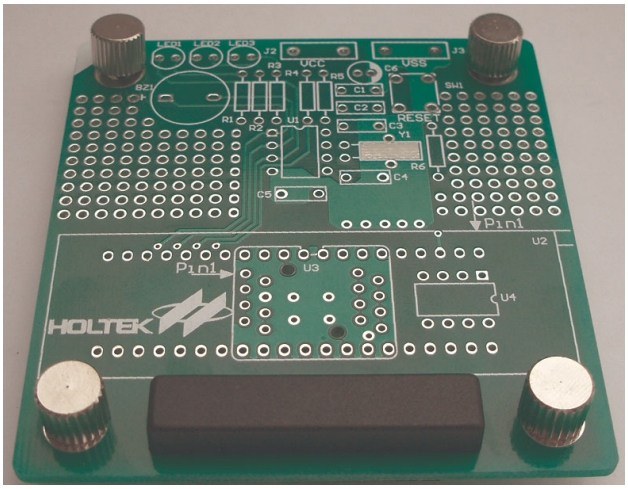

Figure 12. CADP13R90EMU

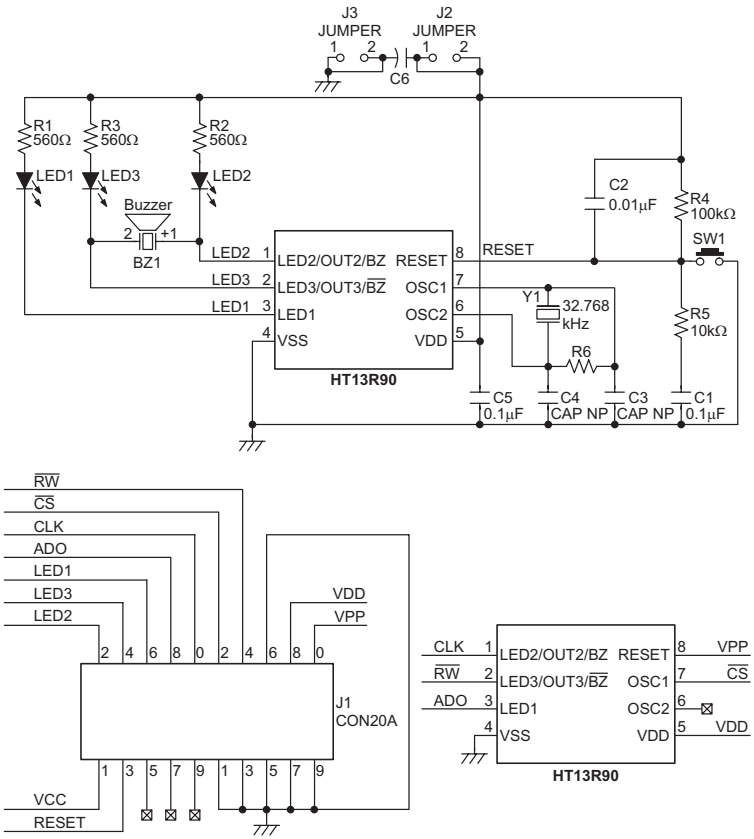

Figure 13. Circuit Diagram for CADP13R90EMU

System Message

The device is not found!
Fail to connect to EW-PTS, please check the USB connections.

Unable to erase flash memory!
Fail to clear the flash memory for EW-PTS.
Please check USB connection, or, the flash on the EW-PTS is bad.

Flash ROM format check is error!
Fail to check the data on the Flash.

Download option and driver information is OK!
The driver data and option data has be downloaded successfully.

Program is done!
Option data has been programmed to the chip successfully.

Not blank!
The chip is not blank.

IC is locked!
The chip is locked.

Lock is done!
Lock successfully.

Blank check is done!
Blank check successfully.

Verify is done!
Verify successfully.

Emulation is starting!
Start emulation.

Emulation is stopped!
Stop emulation.

Failure to verify!
Verify has failed.

Failure to program!
Program has failed.

Failure to lock IC!
Lock has failed.

Unable to start to emulate!
Fail to start emulation

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